

City of Lafayette Staff Report

For: City Council
By: John M Luttropp, Associate Engineer
Date Written: March 7, 2008
Meeting Date: March 24, 2008
Subject: Presentation of Conceptual Plans for Mount Diablo Boulevard Pathway from the Lafayette Reservoir to Village Center

Introduction/Background

The East Bay Municipal Utility District (EBMUD) has agreed to design and fund the construction of a new multi-purpose pathway on the south side of Mount Diablo Boulevard from Village Center to the Reservoir entrance in conjunction with their project to upgrade infrastructure in the vicinity of the Lafayette treatment plant.

Staff has developed conceptual drawings for this project, which the Bicycle and Pedestrian Advisory Committee and the Ad-Hoc CIP Review Committee (consisting of the respective chairs of the Planning and Design Review Commissions) have reviewed and provided comments. The BPAC supported a five-foot bike lane and incorporating a soft shoulder behind the ten-foot path for runners. The Ad-Hoc CIP Review Committee also supported a five-foot bike lane and suggested that a portion of the asphalt berm in the narrow section of the pathway be eliminated to allow for a wider pathway. Both committees' comments were incorporated into the conceptual drawings, attached, that were presented to the Circulation Commission. At the Circulation Commission meeting, the Commissioners decided, on a 4 to 3 vote, to recommend that the bike lane on Mount Diablo Boulevard within the project limits be increased from five feet to six feet, with the additional foot being taken from the multi-purpose pathway, reducing it from ten feet to nine feet wide (6.5 feet to 5.5 feet at its narrowest section).

When staff presented the conceptual plans for the pathway to the City Council on January 28, 2008, Scott Honegger, Chair of the Lafayette Creeks Committee, asked that the City Council delay making any decision regarding the pathway until the Creeks Committee had an opportunity to review and comment on the planned scope of work. Staff has now received the Creeks Committee comments and they are discussed below.

Staff seeks the Council's decision on the cross-sectional design of the pathway. Once a final concept has been determined for the multi-purpose path, the drawings will be forwarded to EBMUD to develop the final construction plans. Once these plans have been completed and approved by the City, EBMUD will provide the funding for the City to proceed with construction. Staff's rough, order-of-magnitude estimate of the project construction cost is \$215,000. At this time we anticipate the work to occur in the summer of 2009.

Discussion of Pathway Cross-Section

The subject section of Mount Diablo Boulevard consists of two vehicle travel lanes (10½ and 11-foot wide) and a bicycle lane (6-foot wide) on both sides of a center median. The north side of the roadway has no designated pedestrian facilities and the south side has a 7-foot widened shoulder for pedestrians “behind” and adjacent to the bike lane. All facilities are contained within the paved roadbed. The existing south side bicycle and pedestrian facilities are heavily used and accommodate two-way traffic consisting of walkers, joggers, and families with young children in strollers. Experienced bicyclists tend to ride in the existing bicycle lane in the street and less experienced bicyclists ride within the pedestrian shoulder area. Pedestrians comprise the vast majority of non-motorized users along this section of the roadway.

Current design guidelines for a two-way, multi-purpose path call for a minimum 10-foot width (12-foot desired). According to Caltrans’ design standards the minimum accepted width for a bike lane in the street is five feet. The proposed design preserves the existing vehicle lane widths, reduces the existing bike lane in the street by one foot to the 5-foot standard and develops the remaining space within the existing paved roadbed into a ten-foot-wide, two-way, grade separated multi purpose facility (see attached plan sheet 2). Typically there will be three feet of widening along the south edge of pavement to achieve the desired cross section. The proposed design cross-section applies throughout the length of the project except for a 150-foot section near the creek crossing at station 12+50. At this pinch point the path narrows to 6 ½ feet wide to conform to an existing bridge and avoid a large oak tree.

The proposed plans were presented to the Circulation Commission on December 3, 2007. During the meeting the Commission, on a 4 to 3 vote, suggested that the bicycle lane in the street remain at the current six-foot width to allow for a greater margin of safety for those bicyclists using the bike lane. This recommendation would reduce the proposed multi purpose pathway to 9 feet in width (5 ½ feet at the narrow section). The Commissioners in favor of the change felt that a nine foot wide pedestrian facility, albeit less than standard, was sufficient and that the narrow section of 5 ½ feet did not represent a major problem as it is for a short distance.

As currently proposed, the more experienced bicyclists and those riding in large packs would continue to have a standard 5-foot wide bike lane as well as the adjacent vehicle lane available for their use. This would be consistent with the bike lane configuration found to the east of the project limits leading to the downtown core. The less experienced riders as well as pedestrians would use the multi purpose pathway. Reducing the width of the multi purpose pathway to 9 feet (5 ½ feet at the narrowest point) would make it more difficult for the inexperienced cyclists, roller bladers, and mothers with strollers and other users to navigate each other walking two or more abreast or in opposing directions. Considering the large number and various types of pedestrian uses currently observed, combined with less experienced bicyclists, staff believes maintaining a ten-foot standard width for the path wherever possible is the most desirable option that best suits the needs of the greatest number of potential users of the facility. The ten-foot width is also consistent with the width of other multi-purpose pathways constructed elsewhere in the City, including the planned trail in the EBMUD aqueduct right-of-way behind the Veterans’ Building as part of the Woodbury project.

Discussion of Split Rail Fence Concept

In the initial project scoping staff had a split rail fence to be included, similar to the design of the recently completed work on Moraga Road. Staff suggested this design as a means to provide a visual barrier between the vehicle lanes and the pedestrian facility and would also serve to break up the wide cross-section of the road.

On October 18th, 2007, staff presented this option to the Bicycle and Pedestrian Advisory Committee (BPAC) for review and comments. BPAC did not support this design because it felt that the fence would

“trap” bicyclists between the vehicle lanes and the fence, creating an unsafe condition. In addition BPAC felt that a fence along this part of Mount Diablo Boulevard would not be in keeping with the visual character of the area.

On November 6th, 2007, staff presented the same design and the BPAC comments to a joint meeting of the Ad-Hoc CIP Review Committee and the City Council Public Works Subcommittee. At this meeting it was agreed that the fence should be eliminated.

On December 3rd, 2007, staff presented the revised design with no fence to the Circulation Commission. During this meeting staff explained that the fence was deleted from the project at the recommendation of BPAC, the Ad-Hoc CIP Review Committee and the City Council Public Works Subcommittee due to safety and aesthetic concerns. The Circulation Commission had no other specific comments on the issue. The current proposal does not include the fence.

Discussion of Recommendations by the Creeks Committee

The Creeks Committee’s memorandum dated March 3, 2008, outlined several concerns and recommendations. Staff has provided an analysis in response to each item below.

1. *The Committee felt that expanding the pavement on Mount Diablo Boulevard by 10 feet would create a very non-natural visual blight and would impair the maintenance of a healthy riparian ecosystem.*

The existing paved roadbed includes an approximately seven-foot-wide paved shoulder on the south side of the roadway. The current project scope calls for this seven-foot-wide paved surface to be widened by about 3 feet to provide for a 10-foot-wide multi-purpose pathway with an additional 2-foot-wide permeable section soft shoulder (where space allows) adjacent to the pathway to conform to the existing terrain. The existing roadway will not be widened by ten feet to accommodate the path. The additional 3 feet of widening occurs well outside of the creek bank in order to avoid any significant impacts to the existing trees and to avoid triggering environmental permit requirements for working within the creek envelope.

2. *The existing paved shoulder structural section of the roadway behind the proposed curb separating the bike lane from the multi-use pathway should be removed and backfilled with native material prior to constructing the new pathway.*

Regardless of the type of surface treatment and alignment that is desired for the pathway a minimum subgrade section consisting of 4-inches of compacted base rock will be required in order to provide adequate structural support for the pathway surfacing material. The construction of the pathway over native material without the benefit of an engineered subgrade section will result in the rapid failure of the pathway. Rather than removing the existing pavement and subgrade material, it can be pulverized in place and reused as subgrade material for a nominal additional cost. This will improve the permeability of the subgrade as well as provide for a stronger pathway structural section. However, any area proposed for plantings would require the complete removal of the existing road surface and base and replacement with topsoil mix. The removal, off haul and replacement of the existing roadway section with new material (native soil or base rock) is likely to increase the cost of the project by 20%.

3. *The new pathway should be separated from the roadway with landscaping.*

In order to have a substantive landscape area, at least 4 feet of space is needed. For example the landscape buffer along the Pleasant Hill Road pathway is generally 4 feet wide. Due to right of way limitations the installation of landscaping between the roadway and the path will require a reduction in the width of the pathway and/or the bike lane. This will result in non-standard width for one or both of these facilities and compromise the goal of this project. In addition to these space limitations the addition of landscaping will result in a significant cost increase to the capital project as well as an additional future ongoing maintenance cost. To provide a 4-foot landscaped area along the length of the path will cost in the order of \$75,000

4. *The alignment of the new pathway should be meandering with occasional wide spots to serve as view sheds to the creek.*

Due to right of way limitations the configuration options available for the pathway are limited if the goal is to maximize available width for a true multi-purpose use. The meandering of the pathway would have to occur within the confines of the available space. As such a meandering pathway is only feasible with a significant reduction in the pathway width and will render it ineffective as a multi-purpose pathway as originally envisioned for this area.

It is possible that there may be opportunities to create simple, small pad areas adjacent to the path to serve as vista points along the creek. Staff will seek to incorporate this feature into the project scope of work. Any work that requires significant modifications to the existing terrain or encroaches into the creek envelope will carry significant costs, again requiring financial contribution from the City. Additionally, environmental regulatory agencies such as the Department of Fish and Game will have oversight, further increasing the cost of the project and delaying the start of construction substantially.

5. *The pathway surface should be constructed using a permeable material such as decomposed granite or decorative pavers.*

While this recommendation has clear environmental and perhaps visual benefits associated with a permeable surface, it also raises other issues related to costs.

Decomposed granite would be comparable in cost to construct as asphalt concrete, but it is a high maintenance surface that will need frequent attention, especially during the wet season. An option to enhance the durability of decomposed granite is to use a binder in the mix. However, this would in turn reduce the permeability of the material and defeat the original purpose of installing a permeable material.

Brick pavers are not truly permeable. Even with new development in design, they are typically only 25% pervious. Additionally, the cost to install brick pavers compared to conventional asphalt concrete could be as much as five times the cost. Compared to asphalt concrete, pavers also present a higher need for on-going maintenance to limit settlement and trip hazards.

Finally the scope of work that EBMUD has committed to does not include special pavement treatments that are more expensive than asphalt concrete. As such the City will likely need to contribute financially to the project to implement this option.

6. *Drainage of the water collected by the new curbing should be discharged in such a way to dissipate the energy of the runoff to avoid scouring and erosion of the creek bank and be concealed or landscaped to maintain the natural visual character of the creek corridor..*

This recommendation will be addressed in the final design to be done by EBMUD.

Summary of Key Details of Current Design Proposal

1. Currently Mount Diablo Boulevard is striped with a 10 ½' and an 11' vehicle lanes. No changes in these lane widths are proposed.
2. The on street bike lane on the south side will be to be 5 feet wide as it currently is to the east of the project.
3. The two-way, multi-purpose path will be typically 10 feet wide with a narrow section at 6.5 feet wide by the creek crossing and large oak tree at station 12+30.
4. When possible a 2-foot-wide unpaved shoulder for runners will be incorporated into the shoulder backing for the pathway.
5. The multi-purpose path will be constructed of asphalt concrete and raised except at the narrow creek crossing. In this location the pathway will be at grade with the adjacent roadway.
6. The at-grade portion of the multi-purpose path will have a 6-inch high asphalt curb separating the path from the bike lane in the street. The curb will be omitted as the pathway passes the large oak tree at station 12+30. This will increase the width of the narrow point from 5.5 feet to 6.5 feet.
7. Aside from the standard curb, there will be no other vertical barrier between the street and the path.
8. Two trees are planned for removal. One large eucalyptus due to its proximity to the pathway and the alignment of the new EBMUD pipe crossing, and a 12" diameter redwood that encroaches approximately 2 feet into the planned pathway area.

Recommendation

Staff seeks action by the City Council to:

1. Approve pathway design concept as currently proposed.
2. Incorporate comments by Creeks Committee regarding storm drain discharge design.
3. Forward concept to EBMUD to begin final detail design.

Attachments

1. Conceptual drawings
2. Lafayette Creeks Committee Memo